

**WHAT IS CLAIMED IS:**

1        1.        An image sensor, comprising:  
2                multiple pixels each including a respective photodiode region;  
3                pixel circuits each operable to control integration and readout steps for a  
4        respective pixel; and  
5                a bias circuit operable to apply voltages across the pixels to induce carrier  
6        injection into the photodiode regions to reduce image lag.

1        2.        The image sensor of claim 1, wherein the bias circuit is operable to  
2        induce forward bias flow of injected carriers through the pixel photodiode  
3        regions.

1        3.        The image sensor of claim 2, wherein the bias circuit is operable to  
2        periodically induce forward bias flow of injected carriers through photodiode  
3        regions.

1        4.        The image sensor of claim 3, wherein the pixel circuits and the bias  
2        circuit are cooperatively configured so that forward bias flow of injected carriers  
3        occurs during a reset step for each pixel.

1        5.        The image sensor of claim 2, wherein pixels are arranged in an  
2        array of multiple rows and the bias circuit is operable to simultaneously induce  
3        forward bias flow of injected carriers through the photodiode regions of all pixels  
4        in a given row of the array.

1        6.        The image sensor of claim 5, wherein the bias circuit is operable to  
2        simultaneously induce forward bias flow of injected carriers through the  
3        photodiode regions one row at a time.

1        7.        The image sensor of claim 6, wherein the bias circuit is operable to  
2        simultaneously induce forward bias flow of injected carriers through photodiode  
3        regions of a given row before the pixel circuits in the given row initiate an  
4        integration step for the given row.

1           8.     The image sensor of claim 5, wherein the bias circuit is operable to  
2 simultaneously induce forward bias flow of injected carriers through photodiode  
3 regions of all rows in the array.

1           9.     The image sensor of claim 1, wherein the bias circuit is operable to  
2 induce carrier injection between photodiode regions of pixels.

1           10.    The image sensor of claim 10, wherein the bias circuit is operable to  
2 induce carrier injection between photodiode regions of adjacent pixels.

1           11.    The image sensor of claim 10, wherein the bias circuit is operable to  
2 apply different voltages levels to nodes of adjacent pixels.

1           12.    The image sensor of claim 11, wherein the bias circuit is operable to  
2 apply different high-to-low voltage ranges across adjacent pixels.

1           13.    The image of sensor of claim 11, wherein pixels are arranged in an  
2 array of multiple rows and the bias circuit is operable to apply different voltage  
3 levels to nodes of adjacent pixels in adjacent rows.

1           14.    The image sensor of claim 11, wherein pixels are arranged in an  
2 array of rows and columns and the bias circuit is operable to apply different  
3 voltage levels to nodes adjacent pixels in adjacent rows and to apply different  
4 voltage levels to nodes of adjacent pixels in adjacent columns.

1           15.    The image sensor of claim 10, wherein the different voltage levels  
2 applied to nodes of adjacent pixels are switched periodically.

1           16.    The image sensor of claim 10, wherein the bias circuit includes two  
2 bias lines for applying different respective voltage levels to the pixels.

1           17.    The image sensor of claim 10, wherein the bias circuit includes a  
2 bias line and a set of resistive elements respectively coupled in parallel between  
3 the bias line and alternate pixels.

1           18.    A method of operating an image sensor comprising multiple pixels  
2 each including a respective photodiode region, the method comprising:

3       resetting photodiode regions;  
4       integrating charge in photodiode regions;  
5       sampling pixel nodes; and  
6       inducing carrier injection into photodiode regions to reduce image lag.

1       19.    The method of claim 18, wherein inducing carrier injection  
2       comprises inducing forward bias flow of carriers through the pixel photodiode  
3       regions.

1       20.    The method of claim 18, wherein inducing carrier injection  
2       comprises inducing carrier injection between photodiode regions of adjacent  
3       pixels.